(b) **(i)** acceleration *g* of free fall

(ii) techniques and procedures used to determine the acceleration of free fall using trapdoor and electromagnet arrangement or light gates and timer

PAG1
HSW4, 5, 7 Determining *g* in the laboratory.

(6) M - Use the equation of motion to calculate g
(7) S - Evaluate experimental techniques and procedures.
(8) C - Explain techniques to determine acceleration of freefall using a trapdoor

Lesson 7. Freefall and g follow up

0:00:00

STARTER: Peer assess the 'finding g' practical using the MS.

Offer WWW/EBI feedback

HWK:

Kilo 10^3 **Support** - How does this activity link to the space topic

Mega 10^6 **Ex 1** - How does this activity link to the space topic

Giga 10^9


Key point

P

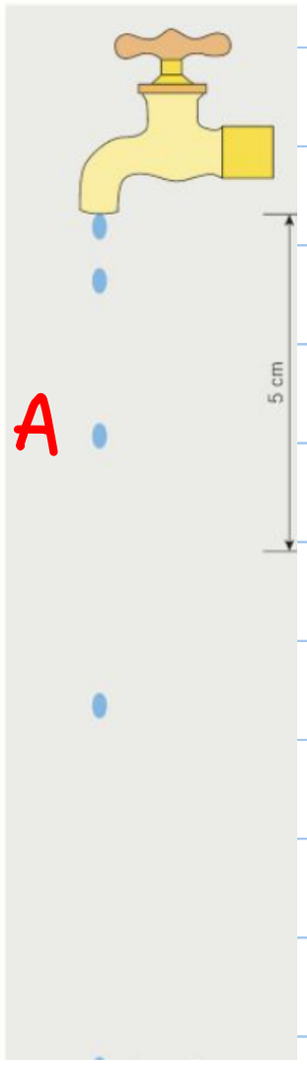
(6) M - Use the equation of motion to calculate g
(7) S - Evaluate experimental techniques and procedures.
(8) C - Explain techniques to determine acceleration of freefall using a trapdoor

Determining g: Example 1: Photographs

Water drips from the tap every 0.040s.

- Use drop 'A' to find the acceleration of freefall (g)

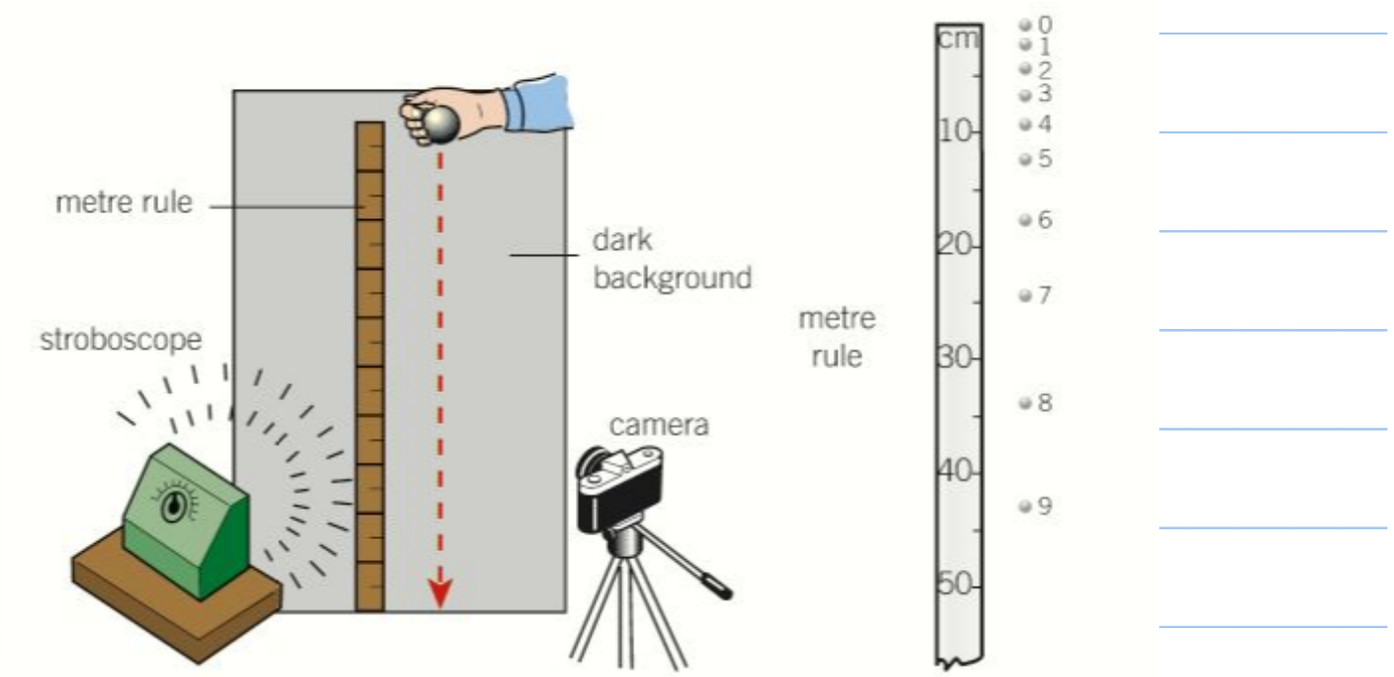
- Repeat for another drop to find an average value for g.



Ex: are there any limitations in this method?

(6) M - Use the equation of motion to calculate g
(7) S - Evaluate experimental techniques and procedures.
(8) C - Explain techniques to determine acceleration of freefall using a trapdoor

Determining g: Example 2: Slow motion video



▲ **Figure 4** *Determining g using a camera and stroboscope*

(6) M - Use the equation of motion to calculate g
(7) S - Evaluate experimental techniques and procedures.
(8) C - Explain techniques to determine acceleration of freefall using a trapdoor

Mini practical

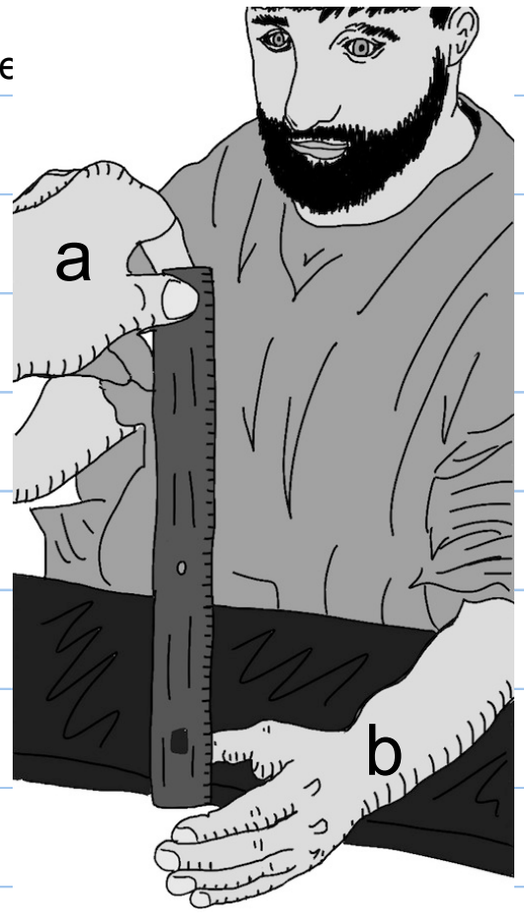
In pairs, person A drops a ruler. person B trie to catch it.

Record the mean distance it travels.

Calculate your mean reaction time.

Hint: use the SUVAT approach, and show working

Extension: If your reaction time was halved, what distance would have travelled?



(6) M - Use the equation of motion to calculate g
(7) S - Evaluate experimental techniques and procedures.
(8) C - Explain techniques to determine acceleration of freefall using a trapdoor

0:05:00

ACTIVITY 1: Reproduce the data fro mteh required practical using this apparatus.

HWK:

Kilo 10^3 **Support** - How does this activity

Mega 10^6 **Ex 1** - Explain how the apparatus reduces the uncertainty in our investigation..

Giga 10^9

Key point

P